

# DMX protocol

This section contains two DMX protocols:

- “16-bit protocol” on page 31
- “8-bit protocol” on page 34

The fixture is set up to use the 16-bit DMX protocol by default. To modify this, use the control menu. For more information see “Control menu” on page 37.

Ensure that you have the latest software installed. For the latest software updates, documentation, and other information about this and all Martin Professional products, please visit the Martin website at <http://www.martin.com>.

## 16-bit protocol

DMX channel	Value	Percent	Function (Start code=0)
<b>1</b>  <b>NOTE!</b>  The Lamp Off command is only active with: • <i>PERS</i> → <i>dLOF</i> in the control menu set to <i>DN</i> , or with • <i>PERS</i> → <i>dLOF</i> set to <i>OFF</i> , and Cyan, Magenta and Yellow set to 255.  The Reset Fixture command is only active with: • <i>PERS</i> → <i>dRES</i> in the control menu set to <i>DN</i> , or with • <i>PERS</i> → <i>dRES</i> set to <i>OFF</i> , and Cyan, Magenta and Yellow set to 255.	0 – 19	0 – 7	<b>Shutter, strobe, reset, lamp on/off</b> Shutter closed (lamp power reduced to 1200 W after 10 sec.)
	20 – 49	8 – 19	No function (shutter open)
	50 – 72	20 – 28	Strobe fast → slow
	73 – 79	29 – 31	Shutter open, lamp power reduced to 1200 W
	80 – 99	32 – 39	Pulse opening, fast → slow
	100 – 119	40 – 47	Pulse closing, fast → slow
	120 – 127	48 – 50	No function
	128 – 147	51 – 57	Random strobe, fast
	148 – 167	58 – 65	Random strobe, medium
	168 – 187	66 – 73	Random strobe, slow
	188 – 190	74 – 74	No function
	191 – 193	75	Random pulse opening, fast
	194 – 196	76	Random pulse opening, slow
	197 – 199	77	Random pulse closing, fast
	200 – 202	78 – 79	Random pulse closing, slow
	203 – 207	80 – 81	No function
	208 – 217	82 – 85	Reset fixture
218 – 227	86 – 89	No function	
228 – 237	90 – 93	Lamp on (lamp power on)	
238 – 247	94 – 97	No function	
248 – 255	98 – 100	Lamp off (lamp power off) Note: value must be applied for >5 secs.	
<b>2</b>	0 – 255	0 – 100	<b>Intensity (dimmer blades)</b> 0 → 100% (when the optional dimmer wheel is installed this must be set to 100%)
<b>3</b>	0 – 255	0 – 100	<b>Cyan</b> White → cyan
	0	0	<b>Random color</b> (if selected on channel 7) Normal (full range)
	1 – 127	1 – 49	Minimum cyan setting (127 = full cyan)
	128 – 254	50 – 99	Maximum cyan setting (128 = no cyan)
	255	100	Normal (full range)
<b>4</b>	0 – 255	0 – 100	<b>Magenta</b> White → magenta
	0	0	<b>Random color</b> (if selected on channel 7) Normal (full range)
	1 – 127	1 – 49	Minimum magenta setting (127 = full magenta)
	128 – 254	50 – 99	Maximum magenta setting (128 = no magenta)
	255	100	Normal (full range)
<b>5</b>	0 – 255	0 – 100	<b>Yellow</b> White → yellow
	0	0	<b>Random color</b> (if selected on channel 7) Normal (full range)
	1 – 127	1 – 49	Minimum yellow setting (127 = full yellow)
	128 – 254	50 – 99	Maximum yellow setting (128 = no yellow)
	255	100	Normal (full range)

DMX channel	Value	Percent	Function (Start code=0)
<b>6</b>	0 – 255	0 – 100	<b>CTC</b> White → CTC
<b>7</b>	0 1 – 31 32 33 – 63 64 65 – 95 96 97 – 127 128 129 – 159 160  161 – 165 166 – 170 171 – 175 176 – 180 181 – 185  186 – 214 215 – 243  244 – 247 248 – 251 252 – 255	0 1 – 12 13 14 – 24 25 26 – 36 37 38 – 49 50 51 – 61 62  63 – 64 65 – 66 67 – 68 69 – 70 71 – 72  73 – 83 84 – 95  96 97 – 98 99 – 100	<b>Color wheel 1 (multi color)</b> White White → color 1,1 Color 1,1 Color 1,1 → color 1,2 Color 1,2 Color 1,2 → color 1,3 Color 1,3 Color 1,3 → color 1,4 Color 1,4 Color 1,4 → white White  <b>Fixed colors on wheel 1</b> Color 1,4 Color 1,3 Color 1,2 Color 1,1 White  <b>Continuous color wheel 1 scroll</b> Fast → slow CW Slow → fast CCW  <b>Random color CMY</b> (set min. or max. CMY limits on channels 3-5) Random color, fast Random color, medium Random color, slow
<b>8</b> <i>(if color wheel 2 is installed)</i>	0 1 – 31 32 33 – 63 64 65 – 95 96 97 – 127 128 129 – 159 160  161 – 165 166 – 170 171 – 175 176 – 180 181 – 185  186 – 214 215 – 243  244 – 255	0 1 – 12 13 14 – 24 25 26 – 37 38 39 – 50 51 52 – 62 63  64 – 65 66 – 66 67 – 68 69 – 70 71 – 72  73 – 84 85 – 95  96 – 100	<b>Color wheel 2 (multi color, MCW) - if installed</b> White White → color 2, 1 Color 2, 1 Color 2, 1 → color 2, 2 Color 2, 2 Color 2, 2 → color 2, 3 Color 2,3 Color 2, 3 → color 2, 4 Color 2, 4 Color 2, 4 → white White  <b>Fixed colors on wheel 2</b> Color 2, 4 Color 2, 3 Color 2, 2 Color 2, 1 White  <b>Continuous color wheel 2 scroll</b> Fast → slow CW Slow → fast CCW  No function
<b>8</b> <i>(if dimmer wheel is installed)</i>	0 – 255	0 – 100	<b>Intensity - (dimmer wheel) - if installed</b> 0 → 100% (see “Optional dimmer wheel” on page 17)
<b>9</b>	0 – 244 245 – 251 252 – 255	0 – 95 96 – 98 99 – 100	<b>Zoom</b> Zoom, wide → narrow No changes Open (hypermode)

DMX channel	Value	Percent	Function (Start code=0)
<b>10</b>	0 – 255	0 – 100	<b>Barndoor 1 (Upper)</b> Out → in
<b>11</b>	0 – 255	0 – 100	<b>Barndoor 2 (Lower)</b> Out → in
<b>12</b>	0 – 255	0 – 100	<b>Barndoor 3 (Left)</b> Out → in
<b>13</b>	0 – 255	0 – 100	<b>Barndoor 4 (Right)</b> Out → in
<b>14</b>	0 – 255	0 – 100	<b>Rotate barndoors</b> Right → center → left (center = 127)
<b>15</b>	0 – 20 21 – 40 41 – 60 61 – 80 81 – 100 101 – 120 121 – 255	0 – 7 8 – 15 16 – 23 24 – 31 32 – 39 40 – 48 49 – 100	<b>MACRO functions (Barndoors)</b> No macro action All doors at 50% No macro action Large doors at 80% and small doors at 0% No macro action Small doors at 80% and large doors at 0% No macro action
<b>16</b>	0 127 255	0 50 100	<b>Pan coarse (Most Significant Byte)</b> Max. left Neutral Max. right
<b>17</b>	0 127 255	0 50 100	<b>Pan fine (Least Significant Byte)</b> Max. left Neutral Max. right
<b>18</b>	0 127 255	0 50 100	<b>Tilt coarse (Most Significant Byte)</b> Max. up Neutral Max. down
<b>19</b>	0 127 255	0 50 100	<b>Tilt fine (Least Significant Byte)</b> Max. up Neutral Max. down
<b>20</b>	0 – 2 3 – 236 237 – 239 240 – 242 243 – 245 246 – 255	0 – 1 2 – 92 93 94 95 96 – 100	<b>Speed: pan/tilt movement</b> Tracking Speed, fast → slow Tracking, slow speed (overrides the <i>PTSP</i> menu setting) Tracking, normal speed (overrides the <i>PTSP</i> menu setting) Tracking, fast speed (overrides the <i>PTSP</i> menu setting) No function
<b>21</b>	0 – 2 3 – 239 240 – 242 243 – 245 246 – 248 249 – 251 252 – 255	0 1 – 93 94 – 95 96 97 – 98 99 100	<b>Speed: dimmer, cyan, magenta, yellow, CTC, zoom</b> Tracking Speed, fast → slow Tracking, studio mode disabled (overrides the <i>MODE</i> menu setting) Tracking, studio mode enabled (overrides the <i>MODE</i> menu setting) Tracking, shortcuts disabled (overrides the <i>SCUT</i> menu setting) Tracking, shortcuts enabled (overrides the <i>SCUT</i> menu setting) Fast speed
	0 – 2 3 – 239 240 – 242 243 – 245 246 – 248 249 – 251 252 – 255	0 1 – 93 94 – 95 96 97 – 98 99 100	<b>Speed: color 1, color 2, barndoors</b> Tracking Speed, fast → slow Tracking, studio mode disabled (overrides the <i>MODE</i> menu setting) Tracking, studio mode enabled (overrides the <i>MODE</i> menu setting) Tracking, shortcuts disabled (overrides the <i>SCUT</i> menu setting) Tracking, shortcuts enabled (overrides the <i>SCUT</i> menu setting) No function

## 8-bit protocol

DMX channel	Value	Percent	Function (Start code=0)
<b>1</b>  <b>NOTE!</b>  The Lamp Off command is only active with: • <i>PERS</i> → <i>dLOF</i> in the control menu set to <i>DN</i> , or with • <i>PERS</i> → <i>dLOF</i> set to <i>OFF</i> , and Cyan, Magenta and Yellow set to 255.  The Reset Fixture command is only active with: • <i>PERS</i> → <i>dRES</i> in the control menu set to <i>DN</i> , or with • <i>PERS</i> → <i>dRES</i> set to <i>OFF</i> , and Cyan, Magenta and Yellow set to 255.	0 – 19	0 – 7	<b>Shutter, strobe, reset, lamp on/off</b>
	20 – 49	8 – 19	Shutter closed (lamp power reduced to 1200 W after 10 sec.) No function (shutter open)
	50 – 72	20 – 28	Strobe on, fast → slow
	73 – 79	29 – 31	Shutter open, lamp power reduced to 1200 W
	80 – 99	32 – 39	Pulse opening, fast → slow
	100 – 119	40 – 47	Pulse closing, fast → slow
	120 – 127	48 – 50	No function
	128 – 147	51 – 57	Random strobe, fast
	148 – 167	58 – 65	Random strobe, medium
	168 – 187	66 – 73	Random strobe, slow
	188 – 190	74 – 74	No function
	191 – 193	75	Random pulse opening, fast
	194 – 196	76	Random pulse opening, slow
	197 – 199	77	Random pulse closing, fast
	200 – 202	78 – 79	Random pulse closing, slow
203 – 207	80 – 81	No function	
208 – 217	82 – 85	Reset fixture	
218 – 227	86 – 89	No function	
228 – 237	90 – 93	Lamp on (lamp power on)	
238 – 247	94 – 97	No function	
248 – 255	98 – 100	Lamp off (lamp power off) Note: value must be applied for >5 secs.	
<b>2</b>	0 – 255	0 – 100	<b>Intensity (dimmer blades)</b> 0 → 100% (when the optional dimmer wheel is installed this must be set to 100%)
<b>3</b>	0 – 255	0 – 100	<b>Cyan</b> White → cyan
	0	0	<b>Random color</b> (if selected on channel 7) Normal (full range)
	1 – 127	1 – 49	Minimum cyan setting (127 = full cyan)
	128 – 254	50 – 99	Maximum cyan setting (128 = no cyan)
	255	100	Normal (full range)
<b>4</b>	0 – 255	0 – 100	<b>Magenta</b> White → magenta
	0	0	<b>Random color</b> (if selected on channel 7) Normal (full range)
	1 – 127	1 – 49	Minimum magenta setting (127 = full magenta)
	128 – 254	50 – 99	Maximum magenta setting (128 = no magenta)
	255	100	Normal (full range)
<b>5</b>	0 – 255	0 – 100	<b>Yellow</b> White → yellow
	0	0	<b>Random color</b> (if selected on channel 7) Normal (full range)
	1 – 127	1 – 49	Minimum yellow setting (127 = full yellow)
	128 – 254	50 – 99	Maximum yellow setting (128 = no yellow)
	255	100	Normal (full range)
<b>6</b>	0 – 255	0 – 100	<b>CTC</b> White → CTC

DMX channel	Value	Percent	Function (Start code=0)
<b>7</b>	0 1 – 31 32 33 – 63 64 65 – 95 96 97 – 127 128 129 – 159 160  161 – 165 166 – 170 171 – 175 176 – 180 181 – 185  186 – 214 215 – 243  244 – 247 248 – 251 252 – 255	0 1 – 12 13 14 – 24 25 26 – 36 37 38 – 49 50 51 – 61 62  63 – 64 65 – 66 67 – 68 69 – 70 71 – 72  73 – 83 84 – 95  96 97 – 98 99 – 100	<b>Color wheel 1 (multi color)</b> White White → color 1,1 Color 1,1 Color 1,1 → color 1,2 Color 1,2 Color 1,2 → color 1,3 Color 1,3 Color 1,3 → color 1,4 Color 1,4 Color 1,4 → white White  <b>Fixed colors 1</b> Color 1,4 Color 1,3 Color 1,2 Color 1,1 White  <b>Continuous color 1 scroll</b> Fast → slow CW Slow → fast CCW  <b>Random color CMY</b> (set min. or max. CMY limits on channels 3-5) Random color, fast Random color, medium Random color, slow
<b>8</b> <i>(if color wheel 2 is installed)</i>	0 1 – 31 32 33 – 63 64 65 – 95 96 97 – 127 128 129 – 159 160  161 – 165 166 – 170 171 – 175 176 – 180 181 – 185  186 – 214 215 – 243  244 – 255	0 1 – 12 13 14 – 24 25 26 – 37 38 39 – 50 51 52 – 62 63  64 – 65 66 – 66 67 – 68 69 – 70 71 – 72  73 – 84 85 – 95  96 – 100	<b>Color wheel 2 (multi color, MCW) - if installed</b> White White → color 2, 1 Color 2, 1 Color 2, 1 → color 2, 2 Color 2, 2 Color 2, 2 → color 2, 3 Color 2,3 Color 2, 3 → color 2, 4 Color 2, 4 Color 2, 4 → white White  <b>Fixed Colors 2</b> Color 2, 4 Color 2, 3 Color 2, 2 Color 2, 1 White  <b>Continuous Color 2 Scroll</b> Fast → slow CW Slow → fast CCW  No function
<b>8</b> <i>(if dimmer wheel is installed)</i>	0 – 255	0 – 100	<b>Intensity - (Dimmer Wheel) - if installed</b> 0 → 100% (see "Optional dimmer wheel" on page 17)
<b>9</b>	0 – 244 245 – 251 252 – 255	0 – 95 96 – 98 99 – 100	<b>Zoom</b> Zoom, wide → narrow No changes Open (hypermode)
<b>10</b>	0 – 255	0 – 100	<b>Barndoor 1 (Upper)</b> Out → in

DMX channel	Value	Percent	Function (Start code=0)
<b>11</b>	0 – 255	0 – 100	<b>Barndoor 2 (Lower)</b> Out → In
<b>12</b>	0 – 255	0 – 100	<b>Barndoor 3 (Left)</b> Out → In
<b>13</b>	0 – 255	0 – 100	<b>Barndoor 4 (Right)</b> Out → In
<b>14</b>	0 – 255	0 – 100	<b>Rotate barndoors</b> Right → center → Left (Center = 127)
<b>15</b>	0 – 20 21 – 40 41 – 60 61 – 80 81 – 100 101 – 120 121 – 255	0 – 7 8 – 15 16 – 23 24 – 31 32 – 39 40 – 48 49 – 100	<b>MACRO functions (Barndoors)</b> No macro action All doors at 50% No macro action Large doors at 80% and small doors at 0% No macro action Small doors at 80% and large doors at 0% No macro action
<b>16</b>	0 127 255	0 50 100	<b>Pan</b> Max. left Neutral Max. right
<b>17</b>	0 127 255	0 50 100	<b>Tilt</b> Max. up Neutral Max. down
<b>18</b>	0 – 2 3 – 236 237 – 239 240 – 242 243 – 245 246 – 255	0 – 1 2 – 92 93 – 94 95 96 97 – 100	<b>Speed: pan/tilt movement</b> Tracking Speed, fast → slow Tracking, slow speed (overrides the <i>PTSP</i> menu setting) Tracking, normal speed (overrides the <i>PTSP</i> menu setting) Tracking, fast speed (overrides the <i>PTSP</i> menu setting) No function
<b>19</b>	0 – 2 3 – 239 240 – 242 243 – 245 246 – 248 249 – 251 252 – 255	0 – 1 2 – 93 93 – 94 95 – 96 97 98 99 – 100	<b>Speed: dimmer, cyan, magenta, yellow, CTC, zoom</b> Tracking Speed, fast → slow Tracking, studio mode disabled (overrides the <i>MODE</i> menu setting) Tracking, studio mode enabled (overrides the <i>MODE</i> menu setting) Tracking, shortcuts disabled (overrides the <i>SCUT</i> menu setting) Tracking, shortcuts enabled (overrides the <i>SCUT</i> menu setting) Fast speed
	0 – 2 3 – 239 240 – 242 243 – 245 246 – 248 249 – 251 252 – 255	0 – 1 2 – 93 93 – 94 95 – 96 97 98 99 – 100	<b>Speed: color 1, color 2, barndoors</b> Tracking Speed, fast → slow Tracking, studio mode disabled (overrides the <i>MODE</i> menu setting) Tracking, studio mode enabled (overrides the <i>MODE</i> menu setting) Tracking, shortcuts disabled (overrides the <i>SCUT</i> menu setting) Tracking, shortcuts enabled (overrides the <i>SCUT</i> menu setting) No function